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ABSTRACT

The organization and promotion of automatic data processing (ADP) in federal, state (or regional) and local government in developing nations requires international assistance and cooperation. At present, there is no comprehensive survey on ADP applications in public administration in various countries and in countries where these applications are known to exist, they do not have validity for the majority of developing countries. Research is vital, and the acceptance of the concept of data banks requires further development to assist interested countries. A master plan is required, and the severe lack of skilled manpower must be remedied. An interdepartmental authority should be established and international cooperation strengthened to assist countries to meet their goals. (AB)

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ADP IN GOVERNMENT ADMINISTRATION

by

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1. INTRODUCTION

This paper will treat the subject of organization and promotion of ADP in Public Administration, in Central (or Federal) Government, in State (or Regional) Government and in Local Government. It is based on the author's personal experience in Israel and on his thorough acquaintance with international activities in the field of ADP.

The special structure of public administration, its wide scope, the great expense involved in its maintenance and its decisive effects on the economy and society of the state, raised the need and the demand for constant improvement of its operational capacity, for cutting its costs and for greater efficiency in the services given to the public. ADP plays already a major role in the fulfilment of these aims, and its intensive use may further increase the chances to achieve these goals. The ever expanding use of ADP in all parts of the public sector is thus a natural trend, and yet we are only at the beginning of this road.

There is, of course, a great difference between developed and developing countries, or those countries which are now passing from one stage to the other. In developed countries the government's growing influence stems primarily from the implementation of large-scale governmental plans in such areas as social services (education, health, welfare), economic planning etc., whereas in developing countries the governement is forced, owing to the circumstances, to take upon itself extensive duties in order to advance the country towards accelerated social and economic development.

Both these groups of countries face many problems in their efforts to improve their administration, mainly with the aid of computer technology. However, while the developed countries are in possession of considerable resources of knowhow, experience and manpower for carrying out their ambitious programs, the developing countries, which have just, or perhaps not yet, introduced ADP activities,

cannot expect reasonable development either of immediate or of long-range needs. Here, international assistance and cooperation are necessary to overcome the many obstacles and difficulties encountered in their necessary and desirable path of progress.

2. CONVENTIONAL GOVERNMENTAL APPLICATIONS

At present there is no comprehensive survey on ADP applications in public administration in various countries. Generally, however, the beginnings of ADP use in government were in tax administration and payroll applications carried out by conventional equipment. Gradually it spread to many other fields into which, and through which, flowed a large amount of information. Such were the applications in the postal administration, railroad administration (where it was government owned), social security institutions (pension payments etc.), vehicle licencing authority and so forth. At a later stage, when the intensive use of computers began, ADP activities penetrated into many additional fields of public administration: police departments began using computer services; in several countries computers were operated to aid agricultural administration (crop control, plant disease etc.); and to some extent ADP was used by the health administration (including hospitals), education, welfare and others.

This development may be characterized as follows: First, the use of ADP was primarily the outcome of decisions taken at the ministerial or departmental level with the expectation of solving current problems of their own administration; there was rarely, or not at all, comprehensive government planning. Secondly, the applications were usually rather simplified and they merely replaced manual work to achieve greater speed and lesser cost. Only few went as far as instituting organizational changes to accommodate the use of ADP. Thirdly, in many cases, perhaps even in most, no appropriate preparations were made for the operation of ADP, neither in research and analysis nor in training manpower and in creating awareness at the various levels of government administration which were involved in the activity.

Even so, this situation refers only to a small number of countries in which ADP use, especially computer based, in public administration reached a relatively high, or medium, stage of development. It is not applicable to the majority of developing countries, in which these problems are not valid. (This description does not refer to Defense Systems, where entirely different conditions prevail.)

It may be supposed that in most cases this process of developing new computer based applications will continue, at a slower or quicker pace. The problem facing governments is first and foremost efficiency in the use of computers and exploitation of their potential for those purposes for which they were intended. This means, first of all, the development of more sophisticated programs which will not merely replace manual work, but will increase the amount of information obtained and improve its quality: there is need of programs which will help the manager in public services to take quicker, better and more far sighted decisions; and special programs to assist the public in their contacts with the authorities and to make their growing dependence on government administration easier and smoother.

If we assume that there is a great similarity between governmental applications in various countires (at least there should be), it will be necessary to examine the possibility of preparing standard package programs for as many as possible governmental applications. This is done to a certain extent by producers, but their programs are mainly commercially oriented and therefore of no great assistance.

This is no easy task. It requires preliminary and rather thorough research, but it is vital for the developing countries and even important for the developed, or for most of them.

3. NEW CONCEPTS

As previously mentioned, there are common characteristics in governmental administration all over the world, although there are differences between the Western and the Socialist countries. The ministries are organized according to subjects and within them there are appropriate units for secondary subjects, in accordance with the scope and specificity of the major subject. Thus, the information in government administration flows in internal closed circuits, narrow or wide, among which there is hardly any connection. This structure justified itself in the past, as an active system of integration between the various extentions of administration was not possible due to a lack of modern technical means.

It is important that this structure be reviewed and re-examined now in the light of the development of information technology.

Without interfering with the specificity of the subjects, it is no longer justified that the input and output data of one or another government department serve only itself and that they do not become the possession of the entire government administration. For example, population data are the basis for the activities of many government departments (education, health, taxation, social insurance, defense etc.). The basic data are uniform and their updating is uniform, whereas every ministry uses them differently and adds its own particular information to it. Thus there is reason and justification for the establishment of a center for population data, which will provide every unit with the information it requires. This is a proper way to achieve efficiency and economy and to improve the services given to the public. Further examples of this nature may be found in land administration, industrial and commercial enterprises, economic and social planning and so forth. The inevitable conclusion is that the government should endeavor to establish data banks, planned out in the light of total government needs, which will serve as centers for the collections and production of information. Such banks may bring about many changes in the

flow of information within the administration, reduce costs and increase efficiency, although they do not necessarily have to change the structure of the departments, which are subject oriented.

Several attempts have been made to establish data banks, especially in the Scandinavian countries, but the undertaking is still in its first stages, and the whole concept, as well as the technical details, require further development, which should be worked out on an international level, in order to achieve high performance standards and to assist interested countries in this matter.

4. A MASTER PLAN FOR INFORMATION SYSTEMS

The expected development of ADP in government administration, which will undoubtedly embrace many countries, includes many additional and special areas and deepen greatly the existing activites, requires central and long-range planning.

This is important to developed countries for reasons of coordination and development but it is extremely vital for developing countries which are just taking their first steps in this field.

The major objectives of this plan could be defined as follows:

a. Evaluation of the development of governmental (and/or public) administration in the next decade.

b. Preparation of an optimal plan to meet future requirements with the aid of computer technology.

In order to carry out the first objective it will be necessary to conduct a comprehensive survey in every country, which will then serve as a basis for the evaluation.

For the second objective it will generally be necessary to

a. plan the flow of information rationally and on the basis of computer technology;

b. formulate a policy for the use of equipment-centralization or decentralization;

c. establish standards (methods, codes, programming, equipment etc.);

d. plan manpower requirements (professional and otherwise);

e. evaluate the necessary investments;

f. decide upon priorities.

This is, of course, a general outline, but it does point out a line of action. The scope and framework of the plan for each country must be worked out so as to suit its particular conditions and circumstances.

Indeed, drawing up a plan of this sort, even of a narrow scope, constitutes a most heavy task, and would involve serious manpower and financial resources which not evey country could afford. It is therefore necessary that an international organization take upon itself the task of preparing the theoretical conceptions and the operational instructions, thus assisting those countries which will want to perform this task.

5. MANPOWER

A serious handicap for the accelerated use of computer technology in public administration stems from the severe lack of skilled manpower. The widespread use of computers created a general shortage of professional personnel but the situation is particularly critical in public administration, since generally governments cannot compete with the private sector in matters of salary, and the most talented government trained people leave it to enter the flourishing private market.

The basic premise is that wide use of ADP in public adminstration cannot be advanced without a minimum governmental reservoir of skilled employees. Outside consulting agencies may and should be called upon to render services, but only when such internal units exist as are capable of absorbing and applying the programs provided from outside.

There are also problems with regard to training all levels of the government administration in the understanding of computer usage in order to facilitate the advance toward new and progressive methods and prevent unnecessary disturbances.

There are only few countries in which a concentrated government effort is made to solve the problem (Israel is preparing now a five year plan for ADP training), and the reasons for it are many and various, but this is neither the time nor place to discuss them.

So the gap is growing between the constant and rapid development of computer technology and the provision of manpower for its exploitation. It is estimated that there will be a shortage of tens of thousands of professionals on all levels all over the world, especially in developed countries. The problem, as has already been stated, will be most severe in public administration. Here too efforts should be combined on an international scale, as it is not within the power of developing nations to handle it. They lack every means needed for this purpose (training resources, suitable study programs, study aids etc.). On the other hand it is clear that the penetration of computers into these countries not only will not stop, but will inevitably increase as a result of commercial diligence and such similar things. This may bring upon the administrations heavy expenses and much difficulty and cause in the end grave complications.

If this supposition is true, ways should be found to overcome the problem. The popular ways of sending experts to developing countries and students from these countries to enterprises and institutions in developed countries are known. But all this is not the answer to the urgent need for manpower. It is thus important to consider the establishment of international training centers in various regions of the world, mainly according to a linguistic division, which will have at their disposal high-level equipment and programs and whose task it will be to train manpower.

6. POLICY AND POLICY INSTRUMENTS

In earlier chapters I have presented in a very general manner the problems, and mainly the different aspects, of ADP in government administration. The above said indicates that government administration will be faced with heavy tasks in the near future, with regard to the development of concepts and methods in the field of ADP, and it will take much effort to cope with them.

It should also be born in mind, that the concept referred to here has to be applicable to all extentions of the government administration, and uniform to some degree with regard to methods and particularly with regard to information flow channels. This will necessitate wide and deep coordination between the various government departments and the operation of suitable authority, at times by means of legislature, in order to implement coordination, integration or standardization, each separately or all together.

Some countries have already come to the conclusion that, in order to promote the goals of ADP, a definite policy and a central governmental authority is needed, an authority which will be responsible for the execution of this policy, which will direct the relevant departments in all matters pertaining

to ADP, allocate financial resources, plan the training of manpower and the acquisition of equipment, set up standards and so on. (This subject will be discussed at length at the Thrid Conference of ICA in Jerusalem).

When there is general agreement as to the need for such a policy making authority, opinion is divided as to its location, that is, which ministry will contain it and what will be its makeup.

From Israel's experience and from the experience of several other countries (the Netherlands, the USA) it is apparent that the most efficient way would be to establish an inter-departmental authority, meaning, a committee of representatives of the major departments which will have at its disposal an executive apparatus. This committee should derive its powers directly from the government and should coordinate its activities with parallel authorities that should be established in other parts of the public administration (federal, state, local).

It would be desirable to prepare a standard manual of the tasks and authority of the committee (there are already such examples), so that every country which intends to establish it will have a proper example and proper guidance.

7. INTERNATIONAL COOPERATION

Just as I consider it preferable to establish an inter-departmental framework for cooperation and coordination with the aim of promoting ADP in each country, so it seems to me that in order to meet the goals facing most countries and especially developing countries, it is necessary to strengthen international cooperation. As in every other area, here too it is advisable that developed countries a) hold regular dialogues among themselves on problems of ADP in their own

governments and b) that they contribute of their experience and knowledge to developing countries.

On the international scene several organizations are active in matters connected with computer sciences: the ICC in Rome which is an intergovernmental organization established especially for this purpose; IFIP and IAG which are non-governmental organizations dealing with the subject within the framework of their particular interests; and other international organizations such as FAO, WHO, ILO, in which ADP is already or will be part of the regular activity. None of these organizations, nor several others which have not been mentioned here, did pay special attention to problems of ADP in government administration, inspite of the scope and importance of this subject. The ICC, which could have been perhaps the natural scene for this activity, did not play, for a variety of reasons, any role in this area so far. A vacuum was thus created which had to be filled up as the needs justified it.

Therefore, at the initiative of the ADP authorities in the Netherlands and Israel, the Intergovernmental Council for ADP(ICA) was founded. This Council considers the promotion of cooperation and the exchange of experience among its members as one of its major duties. It also aspires to assist developing countries to promote ADP in their governments.

The undersigned believes that it is desirable that the entire international ADP activity be concentrated in the hands of one international organization, the UN or UNESCO, but regardless of the decision taken on this matter, in the special field of ADP in government administration the ICA's activities should be supported, since it is the party directly interested in this subject.

Some of the suggestions brought up in this paper are already or will be on the ICA's discussion table, and the fact that the Council's members are key ADP persons in their governments promises a fruitful discussion and favorable results.

8. CONCLUSION

In this limited framework set for me I could merely present a general outline, and even this only in brief manner. I could not bring support for my ideas through a more detailed analysis or by quoting other sources. This, however, was partially done by the enclosed bibliography. Every section should, of course, be examined in greater depth, and the subject should be developed with due consideration to its importance for the international community.

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